Indiana Department of Education
SUPPORTING STUDENT SUCCESS

CLASSROOM INNOVATION IN MATHEMATICS GRANT 2010-11

OVERVIEW

Purpose: From 2005 to 2009, state scores in mathematics were stagnant, rising only one percentage point over the four-year span. At the state level, IDOE is currently exploring new, innovative classroom strategies that will help to push mathematics in Indiana forward. One such strategy is the integration of digital curriculum and technology into traditional teaching methodologies.

The purpose of the program is to provide a select number of LEAs with the opportunity to use digital mathematics curricula, technology-based instruction, and interactive white boards in lieu of traditional textbooks. This grant provides an opportunity for LEAs to pilot digital curriculum which can be readily aligned to changes in standards and to determine its effectiveness with their student populations and within their contexts. Following the grant, LEAs will either continue the use of digital curriculum through their textbook rental program or discontinue use of the digital curriculum and seek an alternative for curricular materials. Digital curriculum would need to utilize innovative strategies for instruction and represent a significant break from the traditional textbook-oriented instruction and be approved by the IDOE, but it would not serve as a standalone, online course that replaces the classroom teacher. In order to evaluate the effectiveness of these strategies, awards will be limited to schools that propose plans for either: 6th Grade, 7th Grade, 8th Grade, and/or Algebra I. The results of this pilot program will be used to evaluate the effectiveness of digital curriculum and provide data for schools that may look at adopting digital mathematics curricula in the future.

This grant program is funded through the David C. Ford Fund.

Application: Please fill out each part completely. For assistance, you may contact Zach Foughty at zfoughty@doe.in.gov or Phone: (317) 233-5019

I. GENERAL INFORMATION

1. Corp #	2. Corp Name	
3625	Huntington County Community School Corporation	
3. Corp Address (Street, City, State, Zip)		**4. Telephone**
1360 Warren Road, Huntington, IN 46750		(260) 356-7812
5. Contact Person's Name	**6. Contact Person's Email Address**	
Charles Grable	cgrable@hccsc.k12.in.us	
7. Contact Person's Address (Street, City, State, Zip)		**8. Contact Person's Telephone**
44 E. Park Drive, Huntington, IN 46750		(260) 356-5464
9. Superintendent's Name	**10. Superintendent's Email Address**	
Mr. Tracey Shafer	tshafer@hccsc.k12.in.us	
11. # of Schools Participating	**12. # of Students Being Served**	**13. # of Teachers Participating**
3 middle schools	**1,411**	**15 teachers**

II. Project Abstract
Briefly describe the proposed project clearly and concisely using the space provided.

The Huntington County Community School Corporation (HCCSC) will improve student achievement in middle school mathematics, Pre-algebra, and 8th grade Algebra I through the integration of digital content and innovative teaching strategies. HCCSC will utilize ALEKS digital content in conjunction with Promethean interactive whiteboards to instruct students in all 6th, 7th, and 8th grade general mathematics, Pre-algebra, and Algebra I classrooms at all three middle school in HCCSC. Student growth will be assessed utilizing the online Acuity and Acuity Algebra, ISTEP+, and Algebra I ECA.

HCCSC strives to provide one-to-one computer and textbook free environments to its students. HCCSC currently has three middle school social studies classrooms piloting this environment, and twelve high school one-to-one classrooms. HCCSC is also in the process of implementing its first New Tech High School with a STEM focus in the fall of 2010. HCCSC would like to build on this foundation by implementing digital content and innovative teaching strategies in middle school math. HCCSC feels that this initiative will assist in its attempt to increase the percentage of students passing the Algebra I ECA by the end of their 9th grade year. HCCSC is committed to sustaining this initiative through a combination of CPF technology funds, Title II-A Professional Development Funds, and applying appropriate costs towards textbook rental fees.

The HCCSC Grant Leadership Team will regularly conduct classroom walkthroughs, data and implementation meetings with teachers, and monitor usage through various reports supplied by ALEKS. HCCSC's secondary Technology Integration Specialist will provide ongoing support to the math teachers, above and beyond the training received for the digital content, interactive whiteboards, and content knowledge. We believe that this initiative will help HCCSC reach its vision of creating world-class learners.

Please complete <u>one</u> grant narrative for your LEA which includes all schools. Narratives should be double spaced, 12pt Times New Roman font, and not to exceed 10 pages.

III. GRANT NARRATIVE

***Software Choice and Rationale*: Identify the digital content program you have selected. Describe how this program aligns with the purpose of the grant. Describe how this program will address the instructional needs of your students and teachers.**

Huntington County Community School Corporation (HCCSC) has selected ALEKS (Assessment and Learning in Knowledge Spaces) for the digital content program we will be implementing in our middle school mathematics classrooms. ALEKS offers a variety of course products that cover basic skills through advanced placement, and provides bilingual content in English and Spanish. The program can be implemented as a core curriculum or supplement for use in remediation, intervention, gifted and talented, after-school, and summer school programs. This program will allow teachers many innovative ways to present material.

ALEKS will allow a teacher to fully differentiate instruction in their math classrooms in ways that never seemed conceivable when using just a textbook. In this "traditional" setting, each student is working out of the same book and doing the same problems, when we know as educators, not every student is at the same ability level, even if they are all in the same grade level classroom. As a first step, all students entered into ALEKS will take an online initial assessment to show what material the student already has mastered. Using the results of this initial assessment, as well as data we have from previous assessments (ISTEP+, NWEA, etc.), we can place a student in the ALEKS class that is most fitting for them. Therefore, a classroom or computer lab will transform into a class of students working at numerous levels of mathematics at their own pace. Students below grade level will work to their zone of proximal development, and close the gap of their actual knowledge and the expected knowledge; as well as, students above the expected knowledge level will have the same opportunity to work ahead in classes not even offered at most middle schools, such as Geometry or Algebra II).

Not only does ALEKS allow the teacher to have a differentiated classroom by topics taught, the reporting features available through the program will also allow the teacher to create flexible group instruction based on topics that the students are ready to learn. ALEKS is driven by an artificial intelligence program that determines what material the students have mastered and with that, what new material they are ready to learn. These are the topics that the students are then allowed to work on, seeing examples and explanations, having vocabulary terms defined, and completing practice problems to show understanding and mastery. Once a student demonstrates mastery on a topic, this will then allow more advanced skills and topics to be unlocked for them to then work on, so it ensures that a student will not be working on a topic until they show enough understanding of the prerequisite materials. The teacher is provided with a report for each class, as well as each student, to show what topics have been mastered and what topics are ready to be learned. The program has a built-in e-mail system that allows the teacher to communicate with the students, and vice versa, so a teacher can email the group of students ready to learn a topic, have them come up to the teacher desk or designated area, and teach that topic to them, and then have them return to their computers to work on that topic to show understanding and mastery. ALEKS not only creates reports for the teachers, but it creates its own assessments to help identify when the students show mastery.

ALEKS has the ability to create numerous types of assessments at either the teacher's request, student's request, or through ALEKS' programming itself. Besides the initial assessment given to the student at the beginning of the school year, ALEKS continually reassesses the student to ensure knowledge retention after every five hours of computer log-in time or mastery of twenty new topics. Teachers have the ability to create their own tests and quizzes as well at whatever interval they choose, either daily, weekly, by topic/unit, or as a comprehensive exam. The teacher can choose the specific topics for these assessments, or allow ALEKS to choose the topics that the students have been working

on recently. Each assessment is created by the program itself, offering the students similar questions but with different values per student, and it is graded by the program itself. The teacher will be given a report showing each student's score, as well as an individual and class breakdown of each question to see what topics may need to be re-taught. ALEKS also offers the opportunity for the teacher or student to create worksheets of the material that the students are currently working with through the program. Each worksheet would be unique for each student; and the program customizes an answer key for each worksheet created. Thanks to options like this, ALEKS is a program that will undoubtedly help every student and teacher that uses it, no matter their difference in abilities.

One of the major concerns for any program is the accessibility and ease of use for the students. This program is very user-friendly, beginning with a demonstration on how to enter answers into the program, how to use the numerous mathematical tools embedded in the program, and showing students how to complete their work in the program. Once in the topic, if the student does not understand how to solve a problem, at the click of a button, the program will explain step-by-step how to solve it, as well as include links for any vocabulary term. The system provides the student an extensive online glossary that will not only define, but give examples of how each term is used. As stated before, the program is fully bilingual. With a simple click on a pull-down menu; it will change the program from English to Spanish. The ability to place a student into the class at their ability level meets the requirements for modifications needed in individualized education plans (IEPs), as well as the ability to work in small, flexible groups based on their ability levels. For the students that are not computer-proficient, the teachers will still be presenting materials in various methods besides ALEKS, as well as being able to print off worksheets through the program for those students that do not have computer access at home. Not only does a program have to be easy-to-use for the students, but it has to be teacher-friendly as well.

One of the major concerns about implementing any program into a classroom is the ability to

work with the program to be able to fully appreciate all of the options the program provides. The area sales representative for ALEKS will come to our buildings to give an overview of how to enter students into the computer, how to enroll them in classes, how to view the numerous reports, and how to create quizzes and assessments on the program. The ALEKS website also has daily online tutorial videos and webinars for those that want to fully dive into all of the options on the program. The program itself has two different teacher interfaces as well. The basic interface is set up in a question format, where it has a drop-down menu of numerous questions that as a teacher you would ask. It will then take you to a page that will show you, as a teacher, what you were looking for. There is also an advanced interface which will allow the teachers who are more technologically-savvy quicker access to numerous tools, as well as allowing the students more ability to modify classes and assessments. The program also allows the teacher the opportunity to tie the program to their current textbook, to a current scope and sequence of topics, or allow the students to work at their own pace to complete the mastery of all the topics for the class. The teachers are also given access to their own student account as well, which will allow them to work through the program from the student's perspective. Overall, this program makes the difficult task of trying to reach mastery at all mathematic levels more of a possibility for the student and teacher.

In conclusion, ALEKS is a program that will allow our mathematics teachers a very unique way to present their material to their middle school students. Not only could this program be used as an independent study, the teachers will be able to use it as a supplement to their normal instruction. With the program's artificial intelligence engine, it determines and targets the gaps in each student's mathematical abilities and provides instruction and practice to close those gaps. The program creates its own assessments, as well as allowing the teacher to create assessments of their own design, all of which are scored automatically by the program itself with the results forwarded to the teacher. Finally, the program addresses and meets many of the concerns of the different technological abilities of the

students and educators that will be using the program. Our goal for this program, and for the use of the grant's purpose, is summed up in ALEK's slogan, "Better Math Scores".

***Professional Development*: Describe the PD needs of your teacher for using interactive whiteboards and implementing digital curriculum and detail the specific plan for meeting those needs.**

Professional development is a top priority at HCCSC, especially in the area of technology integration. HCCSC has a secondary Technology Integration Specialist (TIS) on staff. This in-house trainer's primary role is to work with teachers on how to effectively integrate technology into daily classroom instruction. HCCSC offers annual summer training in technology integration. HCCSC has implemented several initiatives that have increased the technology skill level of teachers: electronic curriculum mapping (utilizing Rubicon Atlas), electronic attendance and gradebooks (through PowerSchool), online assessments with NWEA, and a new data warehouse/mining tool that also allows us to maintain RTI documentation (Pearson Inform) are just a few examples. HCCSC also has numerous secondary teachers piloting one-to-one classrooms. HCCSC has three middle school social studies teacher piloting textbook free, one-to-one classrooms. HCCSC also has twelve one-to-one classrooms at the high school level in a variety of subject areas. HCCSC will be implementing its first New Tech High School in the fall of 2010 with a STEM focus. All of these resources, especially the TIS and teachers piloting textbook free environments, will serve our district to build a comprehensive network of support to the middle school math teachers implementing this grant.

HCCSC will train the middle school math teachers in the basic components of ALEKS in May. This training will be conducted by the ALEKS representative. Additional training sessions will be scheduled in July and early August to assist the teachers in implementing the program at the beginning of the school year. Three math teachers at Crestview Middle School are currently piloting ALEKS this spring. They will also serve as a valuable resource in the training of our other math teachers.

HCCSC's TIS currently trains teachers in the use of interactive whiteboards. HCCSC also has

one high school math teacher that has received extensive training in the use of interactive whiteboards. These two gentlemen, along with the area Promethean representative, will offer training sessions for our teachers in May, July, and early August. The TIS will offer ongoing training and coaching opportunities in the digital content, interactive whiteboards, and instructional strategies throughout the school year.

Besides the TIS, HCCSC also currently works with an outside secondary mathematics consultant that will continue to work with teachers during the 2010-2011 school year on content knowledge. This consultant works through both Susan Kovalk's Highly Effective Teaching Model (HET) and Bill Daggett's International Center for Leadership in Education (ICLE). The consultant works with math teachers in the implementation of best practice, brain-compatible teaching strategies and the integration of technology into instruction. This consultant will be working with teachers several times during the 2010-2011 school year utilizing Title II-A funds, including a week long summer training in June.

A grant leadership team, including the Assistant Superintendent for Instruction, TIS, middle school principals, and math chair from each building will meet in early May and throughout the summer and 2010-2011 school year to coordinate professional development and monitor implementation.

***Implementation Plan – Digital Content*: Describe your plan for monitoring the implementation of the digital content with fidelity to program guidelines.**

The grant leadership team (Assistant Superintendent for Instruction, TIS, principals, and math chairs) will provide guidance for each teacher in the implementation of the digital content. The leadership team will monitor implementation is a variety of ways. The team will conduct regular walkthroughs/observations in the classrooms (weekly by principals and monthly by Assistant Superintendent and TIS). The administration will hold monthly System to System (S2S) meetings with

teachers to discuss implementation and improvement data (HCCSC currently holds these meetings K-12 on a monthly basis). Administrators in ALEKS have an account that gives them access to all schools and students in the district; allowing the administrator can keep track of all students on ALEKS in the district. There are also student reports that track student usage of ALEKS, (not only in school but outside of school), as well as the detailed progress history reports that tracks student growth. There is also a Time and Topic Report for students that track daily time in ALEKS, as well as, how many topics they tried vs. how many they mastered. A district level administrator can request and receive information from ALEKS that shows the amount of time a teacher spends in the ALEKS program. All of these methods will be utilized to monitor the fidelity of implementation and that the digital content is utilized as the curriculum at least 80% of the time.

Teacher collaboration will be an important aspect in the implementation of this grant. HCCSC currently has weekly collaboration time for all teachers. Teachers have 45 minutes every Wednesday morning for collaboration. There is also an e-mail function in ALEKS that is a communication tool between students and teachers or teacher to teacher. ALEKS also has a National Discussion Forum that connects all ALEKS teachers. The Discussion Forum is no charge to ALEKS users. Teachers can post questions or comments and not only will ALEKS respond, but other ALEKS teachers can weigh in with suggestions or ideas.

Student access to computers will not be an issue at any of the middle schools. Ultimately, HCCSC plans to utilize the grant funds, CPF technology funds, and possibly textbook rental funds to create one-to-one computer environments in each of the middle school classrooms. If this is not possible; as a "plan b", mobile labtop labs will be purchased for the math teachers to share, insuring that they have the access needed to implement this grant. Another alternative is "plan c", each middle school will create a schedule allowing the math teachers to utilize existing computer labs for the math

instruction/assessment (two of the schools each have 3 computer labs, and the third smaller school has two).

Implementation Plan – Interactive Whiteboards: **Outline your current inventory of interactive whiteboards, how you can realign current inventory to meet program goals of one interactive whiteboard per classroom mathematics teacher, and what funds you would apply for in order to address these gaps.**

HCCSC currently has a minimal number of interactive whiteboards in each building. HCCSC will utilize the $3,500 per teacher and CPF technology funds to purchase a Promethean Board and NEC LCD Projector for each of the 15 middle school math classrooms. The board that we are planning on purchasing is the Active Board 387 Pro at $1,499 per board. This is an 87 inch interactive white board with interactive software, built in speakers, and dual pen capability. With the dual pen capability, the teacher and student can interact together on the board. The boards will be mounted in the classrooms over the summer (costs for mounting boards and projectors are included in the budget). The interactive software that comes with the Promethean Boards will allow for the interaction with ALEKS, as well as many other presentation features that will allow the teacher to incorporate innovative instructional strategies into daily instruction (i.e.: teachers will routinely be able to save examples of problems worked in class to their classroom Moodle page. This will allow students and parents to review the examples at home for homework support).

Implementation Plan – Online Assessments: **Describe each school's capacity and commitment to administer online ISTEP+ and ECA assessments, as well as Acuity Assessments, both with and without additional lab space that grant funds could provide. Describe how teachers will ensure that students are trained on how to properly complete online assessments.**

The students and staff at HCCSC hold many years of experience with online assessments. HCCSC currently administers NWEA online assessments (Reading, Language Usage, and Math) in grades K-12 three times a year. Each of the three middle schools currently has the capacity to administer any online assessments. Due to this practice, the students will need minimal training in how to properly complete online assessments. However, being new to Acuity, the teachers will take

any steps necessary to ensure that the students fully understand the structure of the online Acuity and ISTEP+ assessments. HCCSC currently offers Algebra I in 8th grade. Those students already take the Algebra I ECA online each spring. The new online assessments for HCCSC will be Acuity and ISTEP+. Each middle school is committed to administering both of those assessments online during the 2010-2011 school year.

IV. BUDGET

See program overview for allowable costs. List each expenditure on a separate line.

Expenditures Budget
(Use a separate line for each expenditure, and add rows as needed)

Expenditure Description	Person Responsible	Cost per Unit	Number of Units	COST
ALEKS subscriptions	Charles Grable	$30	1,411	$42,330
2 Days of training on Promethean Boards	Charles Grable	$2,300 (for 15 teachers)	2	$4,500
Promethean Interactive whiteboard - Active Board 387 Pro	Charles Grable & Tom Ashley	$1,499	15	$22,485
White board installation	Tom Ashley	$400	15	$6,000
NEC LCD Projector, model NP 110	Tom Ashley	$450	15	$6,750
LCD Projector Mounting	Tom Ashley	$1,151	15	$17,265
Acuity Algebra set-up fee	Charles Grable	$4,500	3	$13,500
Cost for Acuity Algebra administration (per student)	Charles Grable	$8.75	170	$1,487.50
Lenovo Mini 11 Laptops & Carts	Tom Ashley	$18,000 (2 carts & 30 laptops)	8	$75,000
			Total Funds Requested	$ 189,317.50

LOCAL SHARE*

***This is not a requirement for the grant, but it will help us to determine the additional resources need at the local level.**

Expenditures Budget
(Use a separate line for each expenditure, and add rows as needed)

Expenditure Description	Person Responsible	Cost per Unit	Number of Units	COST
2 Days Training on Promethean Boards (remaining costs above grant)	Charles Grable	$2,300 (for 15 teachers)	2	$100
Potential Substitute Teacher Costs – Promethean Board training	Charles Grable	$70 x 2 days	15	$2,100
Potential substitute teacher/summer stipend costs for ALEKS Training	Charles Grable	$70 x 2 days	15	$2,100
LCD Projector Mounting (remaining costs above grant)	Tom Ashley	$849	15	$12,735
Lenovo Mini 11 Laptops & carts (remaining costs above grant)	Tom Ashley	$18,000 (2 carts & 30 laptops)	8	$69,000
			Total Funds Requested	$ 86,035

V. ASSURANCES

By checking each box below, you agree to the following assurances:

- ☑ The LEA assures that Acuity online assessments will be administered to assess student growth during the grant period (e.g. Acuity Predictive or Pre/Post Test; the exact assessments will be determined by the DOE, but will not exceed 3 tests during the school year, excluding ISTEP+ and ECA).
- ☑ The LEA assures that, given favorable results on a statewide level, it will give serious consideration to sustained use of digital curricula in all schools in the LEA until the next textbook adoption cycle (2016-17 school year).
- ☑ The LEA assures that the selected digital curriculum will be implemented, with fidelity, as the core curriculum for all mathematics classrooms (6th Grade, 7th Grade, 8th Grade, and/or Algebra I) at each school that receives grant funds, for the duration of the school year. "With fidelity" implies that districts will take the steps necessary to implement the digital curriculum as outlined by the vendor.
- ☑ The LEA assures that teachers will be provided with professional development necessary to implement digital curriculum with fidelity. Professional development includes, but is not limited to, training on digital curriculum software, integrating interactive whiteboards into a standards-based classroom, and using Acuity assessments to guide instruction.
- ☑ The LEA assures that funds used for interactive whiteboards will remain in mathematics teacher classrooms for the duration of the program. Any realignment of current inventory for these purposes will also remain in effect for the duration.
- ☑ The LEA assures that all 7th and 8th grade students in Algebra I will take the Algebra ECA online.
- ☑ The LEA assures that all students will take the ISTEP+ online, unless the school can demonstrate an inability to test all students online.
- ☑ The LEA assures that all teachers that use digital curriculum will participate in an *anonymous* evaluation of the program to determine its ability to impact teaching methods.
- ☑ The LEA assures that classrooms in which digital curriculum is being used will be available for observation by certain members of the Department of Education, with reasonable notification, to provide for a qualitative analysis of program effectiveness.
- ☑ The LEA assures that all students will complete a survey regarding the effectiveness of the digital curriculum.
- ☑ The LEA assures that all hardware and software implementations will be put in place before the start of the 2010-11 school year and that professional development related to this program will begin before the start of the 2010-11 school year.
- ☑ The LEA agrees to keep such records and to provide such information to the State educational agency, as may be reasonably required for fiscal audit and program evaluation (consistent with the responsibilities of the State educational agency under this part).

VI. SIGNATURES

List the management team of this grant for each school. Each member of the management team should also sign below. Complete this sheet for *each* school that is included in the district's implementation plan.

School Name: Crestview Middle School Grade Levels: 6, 7, & 8

NAME	POSITION	Signature
1. Tracey Shafer	Superintendent	
2. Charles Grable	District Math Coordinator	
3. Charles Grable	District Assessment Coordinator	
4. Chad Daugherty	Principal	
5. Matt Groves	Math Department Chair	

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List the management team of this grant for each school. Each member of the management team should also sign below. Complete this sheet for *each* school that is included in the district's implementation plan.

School Name: Salamonie Middle School Grade Levels: 6, 7, & 8

NAME	POSITION	Signature
1. Tracey Shafer	Superintendent	
2. Charles Grable	District Math Coordinator	
3. Charles Grable	District Assessment Coordinator	
4. Rick Reed	Principal	
5. Nicole Rich	Math Department Chair	

VI. SIGNATURES

List the management team of this grant for each school. Each member of the management team should also sign below. Complete this sheet for *each* school that is included in the district's implementation plan.

School Name: Riverview Middle School Grade Levels: 6, 7, & 8

NAME	POSITION	Signature
1. Tracey Shafer	Superintendent	
2. Charles Grable	District Math Coordinator	
3. Charles Grable	District Assessment Coordinator	
4. Curt Crago	Principal	
5. Lynn Groff	Math Department Chair	